

**SECRETARY OF DEFENSE SECRETARY OF THE NAVY
FY 2009 ENVIRONMENTAL AWARDS PACKAGE
ENVIRONMENTAL QUALITY TEAM**

Introduction:

The United States Marine Corps is one of the most respected Military organizations in the world. The Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center (MCAGCC) is focused on deploying mission-ready Marines to defeat traditional, terrorist, and emerging threats to our nation's security. Occupying more than 900 square miles near Twentynine Palms, California, in the high-desert region of the southern Mojave Desert, the Combat Center is the Marine Corps' premier live and non-live fire, urban, combined arms and maneuver training facility.

Background:

Mr. James Lessard, Director Natural Resources and Environmental Affairs
Mr. Plessie Ellitt, Pollution Prevention Manager
Mr. Raymond Luzier, Range Sustainment Manager
Mr. Scott Kerr, National Environmental Policy Act / Comprehensive Environmental Training & Education Program Coordinator
Mr. Joe E. Valls, Compliance Support / Environmental Management System Manager
Mrs. Lacy Richey, Program Analyst
Cpl Jamie Proulx, Compliance Support
Mr. Philip Chambers, Air Resources Manager
Mr. Chris Elliott, Water Resources Manager

Position Description:

The Natural Resources and Environmental Affairs Environmental (NREA) Quality Team implement and manage multi-media programs for the installation. These programs include Pollution Prevention, EMS, Compliance, Range Sustainment, NEPA, and CETEP. These programs maintain a pro-active approach to meet and exceed regulatory requirements while working with tenant commands and visiting Marine units training at the combat center. The teams coordinate to assist the command with meeting and exceeding goals to include waste reduction, environmental compliance, environmental management systems, range sustainment, NEPA, and environmental training.

Awards and Services:

The team has numerous awards and regulatory recognitions to include receiving the "Mojave Green" award for the Marine Corps Community Services retail gas station for superior compliance. The installation was also the recipient of the Pollution Prevention and Energy Management Award from the Secretary of the Navy in 2008. The CGIP was presented a Letter of Appreciation for superior performance during the Commanding General's Inspection. These efforts also were also recognized by the Commanding

General, Brigadier General C. M. Gurganus, who presented Natural Resources and Environmental Affairs with a Certificate of Appreciation on 3 March 2009.

Accomplishments:

Waste Reduction Efforts

Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center (MCAGCC) has procured and installed five Somat eCorect Compostable Waste Decomposers at all three installation Dining Facilities. The on-site system decomposes compostable waste using energy-efficient and automated control processes. The system is equipped with water recycling technology that uses condensate run off to control humidity in the processing chamber during the process. The system also recycles the heat energy reducing overall energy consumption. Benefits are:



- As much as 9 to 1 (93%) volume reduction in wet waste
- No venting
- No potable water connection required
- Beneficial reuse to include Biofuel, Feed, and Compostable Material and condensate reuse
- Decomposes compostable waste without using any microorganisms, enzymes or additives
- Ability to achieve a self-mandated Zero Waste Initiative (100% landfill diversion) at the Camp Wilson Expeditionary Dining Facility

An Eco Shredder has been installed at the Camp Wilson dining facility to shred the cardboard serving trays and paper cups that come with the B RATIONS breakfast and dinner meals. The finely shredded paper byproduct reduces volume of waste and is available for reuse. The Eco Shredder diverts 90% of the cardboard solid waste, reducing daily bagged trash from 300 bags to 30. In replacing the provided plastic utensils with commercially available compostable utensils, the dining facility will potentially achieve a 100% landfill diversion of non-compostable product

Future Research and Development (R&D) with Food Recycling Science is being pursued to examine these technologies in an expeditionary setting. Energy demands have grown and critical supplies for the troops abroad not only include fuel, water, and power, but also food-related logistical concerns for both transportation and disposal. Recycling Science has developed compost waste byproduct pellets from the dining facilities that show promising use in pellet stoves and possibly boilers. MCAGCC is supporting an

effort to examine the use of a portable composter for expeditionary use at the Forward Operating Bases (FOBs) to divert food waste and reuse the byproduct as a fuel source. This process could reduce the number of required vehicles and convoys involved in sustainment and waste removal, reduce overall fossil fuel demand, and reduce risk to the total number of troops in harm's way by reducing convoy movements to and from the FOB's. Another possible benefit is that of making the organic byproduct available as animal feed to local populations in areas like Iraq and Afghanistan to help foster trust and build a positive relationship with the local nationals. This effort is a positive step in the service goal of a self-sustainable expeditionary military force.

The Combat Center developed a "Green Council" in April 2009 to assist the Command with promoting environmental awareness by incorporating, adopting, and promoting progressive environmental standards and practices that demonstrate our commitment to leadership in sustainable energy and environmental excellence. The council has been key in tracking goals set by Executive Order (EO) 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" and EO 13514, "Federal Leadership in Environmental, Energy and Economic Performance." MCAGCC is committed to meeting and exceeding EO goals and being a model for the Marine Corps with sustainability initiatives.

MCAGCC has set the standard and this effort has resulted in Marine Corp interest from the major regional commands MCI West and MCI East. HQMC has taken the "Green Council" concept and encouraged other Marine Corps installations to adopt similar cross-functional teams to guide Environmental Management and meet Executive Order goals. The mission of the council is not only one of protecting the environment for the Marines, civilians, and contractors who work and live at MCAGCC, but it is also one of promoting energy independence.

Previous efforts to track sustainability focused on programs run by the environmental department. With the creation of the Green Council, a cross-functional team has been developed to measure efforts for the installation to meet and exceed the Executive Order 13514. The installation has already exceeded energy efficiency reduction goals, leading the way with conservation efforts, renewable power initiatives, and water conservation. In the area of alternative fuels, MCAGCC is the only West Coast installation issuing E-85 for fleet support. The base has 139 flex fuel vehicles (E-85), 53 electric vehicles, 54 CNG vehicles and is aggressively pursuing replacing the bus fleet with CNG powered buses.

The Combat Center Waste Water Treatment Plant (WWTP) was originally constructed in the 1950's and has undergone several repairs and upgrades over the years in order to meet the constantly evolving and expanding mission of the Combat Center. The WWTP is the only treatment facility in the high-desert region of the southern Mojave Desert, exclusively serving the Combat Center. The current WWTP upgrades are focused on improving the operational capabilities of the WWTP while providing significant environmental improvements and energy savings. These renovations will remove the existing primary mechanical treatment process and replace existing secondary storage pond system with a constructed wetland treatment process.

As part of the Primary treatment renovations, a new head works will be constructed, providing a fully-enclosed negative pressure room which will force head works air/odors through a natural bio-mass filter to remove odors eliminating the “Lake Bandini” odor effect. Additional changes to the primary treatment system will see improved energy efficiency through the removal of existing mechanical processes. As part of the primary system upgrade, the Combat Center will divert digested sludge to our on-site Class III landfill. Removal of the mechanical process within the waste water treatment system will not only provide energy reduction, but reduced maintenance and improved overall efficiency of the facility.

The new Secondary Treatment process will consist of a constructed wetland which will act as a passive biological method for providing treatment. This method of treatment will be the first in the Marine Corps and will not only meet permit requirements, but reduce current chemical costs associated with current operations. Waste water passing through the WWTP will be treated and reused as recycled water (purple piped) for irrigation. The recycled water produced by the WWTP is used to irrigate the Combat Center parade field, Golf Course, and other common use areas. Recycled water for irrigation provides a sustainable method of conserving potable water and ensuring the longevity of the installations potable water supply; it also sustains our quality of life, future training, and operations at the Combat Center.



Construction site of the future Mainside Wastewater Treatment Facility at MCAGCC. This facility will utilize a biological treatment and be the first facility in the Marine Corps treating and reusing wastewater for irrigation.

NREA has implemented a new program, Water Trax, aimed at tracking, managing and storage of all water related analytical data. We are the first Marine Corps installation to use this program, though other military installations and civilian water districts use this program. Water Trax provides instant upload of all analytical data directly from the lab, reducing wait times and chance of discrepancies. This improved accuracy also allows us to recall any and all data via computer which results in paper reduction and the need for a large amount of file storage. With this ability for instant recall of data we are also able to generate reports detailing everything from trend analyses to time line tracking. The data is stored in multiple offsite servers for secure backup yet allows access via password and login from almost anywhere there is an internet connection. Yet another time saving future of Water Trax is the incident management module. This module allows the Water Resources office to track everything from sanitary sewer overflows to drinking water complaints.

Effective Use of Funds

By regionalizing ordnance processing, the installation Range Sustainment Branch (RSB) is able to save the Marine Corps millions of dollars in cost avoidance for contractor support of range clearance and processing.

Additionally, scrap metal from ranges is now being received and processed from MCAS Yuma, Edwards Air Force Base, and MCB Camp Pendleton. To date, 1,472 tons have been processed at the Combat Center resulting in contract savings of \$28M at Edwards Air Force Base, \$13.2M at MCAS Yuma, and \$10M at MCB Camp Pendleton. Acquiring recyclable materials from other DoD installations enables us to increase sales, revenue, and insure the sustainability of training ranges to meet mission training requirements across DoD. The additional revenue supports an increased workforce for faster processing of material, saving units time and money at turn-ins, improving sellable product by updating equipment, and enabling quality of life purchases in support of tenant and training units, RSB, and MCAGCC.



One Quality of Life initiative was the refurbishment and expansion of the Children's Park. Recycling revenues collected from residential recycling aboard MCAGCC were used to purchase and install new playground equipment made of 100% recycled material. The improvements have increased morale for military families and help the base promote its recycling effort.

Additionally, the purchase of food composters for the Messhalls at MCAGCC is reducing overall costs and frequency of food waste disposal, which in turn is leading to decreased

pick ups, lower processing demands and reduced materials disposed of in the installations' Class III landfill. All of this allows a shift in labor assignments to support tenant and training units and other MCAGCC residents and businesses.

Environmental Compliance Assessment and Management Program

The Compliance Support Section facilitates a Self-Audit Program that provides the Commanding General, MAGTFTC, MCAGCC, visibility of the installation's environmental compliance at every command, unit, tenant, or activity aboard the installation. The program is a proactive audit system used in conjunction with the Environmental Management System (EMS) to identify practices with potential risks to the Installation's mission, and mitigates those risks through engineering and management solutions. The Self-Audit Program consists of two audit types, to include:

- Technical Assist Visit (TAV) - Used to evaluate each activity's conformance to applicable regulations on a quarterly basis. The TAV is an informal audit and a valuable training opportunity for activity personnel responsible for environmental compliance.
- Formal Assist Visit (FAV) – MAGTFTC, MCAGCC has incorporated the ECE Self-Audit Program into the Commanding General Inspection Program. This audit received installation command level oversight as a result. The FAV is conducted annually in the place of a TAV.

During the previous FY, the Compliance Section visited all identified military/civilian activities aboard MCAGCC quarterly. In total, 1610 practices were inspected and their environmental compliance validated during the year. These practice range from battery recharging and fuel storage to oil-water separators and vehicle wash racks.

Due to the outstanding mission support and on-going positive relationship with local regulatory agencies, the NREA Division was recognized with a Letter of Appreciation for Special Recognition from the Command Inspector General noting superior performance during the Commanding General's Inspection. The Commanding General, Brigadier General C. M. Gurganus, also recognized the program's accomplishments and presented Natural Resources and Environmental Affairs with a Certificate of Appreciation on 3 March 2009.

Environmental Management System

MCAGCC has led the Marine Corp in developing an EMS "Base Order" consisting of 18 elements defining the program as well as the development of Environmental Standard Operating Procedures (ESOP) and Rapid Learning Objectives (RLO) to train Marines, Civilians, and Sailors to perform their assigned duties to meet the mission and have a minimal impact to the environment. All of these training tools have been incorporated into the installation's Comprehensive Environmental Training and Education Program (CETEP). This program ensures that all unit environmental training requirements on Base are satisfied. Future plans include implementing IT solutions to better manage environmental practices, aspects and impacts (PAI) via the new EM Portal.

National Environmental Policy Act (NEPA) Planning, Analysis, and Implementation

From the beginning stages of proposed action development, Natural Resources and Environmental Affairs (NREA) Division is involved in the planning process. NREA advises Action Sponsors on the best course of action to ensure success and decision makers have been trained to consider all environmental consequences before making the decision to act. NREA provides environmental planning assistance and regulatory consultation throughout the NEPA process.

The NREA requires Action Sponsors to submit a Request for Environmental Impact Review (REIR) concerning facilities repair, construction, maintenance, real estate licenses, and training events that occur at MCAGCC. Using a local share drive, Action Sponsors are able to see the status of NEPA documentation at all time. This ensures that proposed actions receive timely environmental attention. To ensure mission readiness, NREA has streamlined the review process using their Environmental Planning Staff, which has reduced the average processing time of REIRs from 45 to 20 days. The installation's Resident Officer in Charge of Construction only awards contracts that have completed NEPA documentation.

Community Relations

NREA conducts educational tours for community outreach to include the recycling processing facility to demonstrate our great environmental stewardship. On an average there are 10-15 tours per year and average between 20 and 50 persons. The tours show every stage of the operation from units turning in materiel, the processing equipment and the final item that goes on sale. The tours have accommodated schools, Boy Scouts, Chamber of Commerce, City Council members, local rotary, VIPs, and retirees and we also support local "Earth Day" events with the local communities. During on-site regulatory landfill inspection out-brief, both the State and County inspectors have praised MCAGCC's solid waste reduction efforts and pro-active Environmental Quality programs that not only ensure compliance but set the standard for other military installations and businesses in California.